Claims

1. Burner apparatus (1) for burning fuel (5) and air (4) to combustion gas comprising a main axis (7), a premixing chamber (3) for premixing fuel (5) and air (4) with

- an air inlet (8) for air (4) to enter said premixing chamber (3) and having a cross-sectional area (9)
- a fuel inlet (11) for fuel (5) to enter said premixing chamber (3)
- an outlet (12) for a mixture of air (4) an fuel (5) wherein,

said fuel inlet (11) being located between said air inlet (8) and said outlet (12), further comprising at least one air blocking member (2) situated at the air inlet (8) for stabilising a burner premixing flame by locally blocking the flow of air (4) entering said premixing chamber (3) so that downstream said outlet (12) a locally inhomogeneous fuel concentration (23) results generating a locally hot stream of combustion gas being hotter than the average flame temperature.

2. Burner apparatus (1) according to claim 1, wherein said air inlet (8) has in said cross-sectional area (9) an outer periphery (14) and with said at least one blocking member (2) being located at the outer periphery (14).

3. Burner apparatus (1) according to claim 2, wherein said at least one blocking member (2) extends towards said main axis (7).

4. Burner apparatus (1) according to claims 2 and 3, wherein said at least one blocking member (2) has at said outer periphery (14) a width (D) which width (D) decreases towards said main axis (7).

5. Burner apparatus (1) according to claim 4, wherein said width (D) decreases continuously towards said main axis (7).

6. Burner apparatus (1) according to claims 4 or 5, wherein said at least one blocking member (2) has a triangular, a trapezoidal or a partially hyperbolic, elliptic or circular shape.

7. Burner apparatus (1) according to anyone of the preceding claims, comprising a pilot burner (16) centred to and extending a long said main axis (7) for igniting said mixture of fuel (5) and air (4).

8. Burner apparatus (1) according to anyone of the preceding claims, extenuating along said main axis (7), wherein said premixing chamber (3) comprises a ring channel (17), with said air inlet (8) having a annulus cross-sectional area (9) inclined to said main axis (7),
comprising a swirl element (18) despised in said ring channel (17) for imposing a momentum to said flow of air (4) and for feeding said fuel (5) in said flow of air (4).

9. Burner apparatus (1) according to anyone of the preceding claims, comprising a regularly perforated plate (19) in said cross-sectional area (9) to which said at least one blocking member (2) is bound.

10. Burner apparatus (1) according to anyone of the preceding claims, wherein at least four blocking members (2) are distributed irregularly in said cross-sectional area (9).

11. Burner apparatus (1) according to anyone of the preceding claims in a combustion turbine, which combustion turbine comprises a combustion chamber (20).

12. Burner apparatus (1) according to claim 11, wherein during operation in said combustion chamber (20) at least one recirculation zone (21) with recirculating combustion gas develops and said locally hot stream of combustion gas caused by said blocking member (2) lies at least partially within said recirculation zone (21).

13. Burner apparatus (1) according to anyone of the preceding claims, for operation with a fluidical fuel (5), in particular gas or oil.

14. Burner apparatus (1) according to anyone of the preceding claims, wherein said at least one blocking member (2) covers less than 30%, in particular between 2% and 20%, of said cross-sectional area (9) of said air inlet (8).